U.S. Department of the Interior • U.S. Geological Survey

# MINERAL INDUSTRY SURVEYS

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## LEAD IN NOVEMBER 1997

Mine production, based upon the net quantity of lead recovered in the smelting of concentrate, decreased by 11% in November and was down by 6% compared with production in November 1996. Primary refinery production decreased by 5% in November but increased by 11% compared with production in November 1996. Secondary refinery production decreased by about 1% in November and was down by about 2% compared with production in November 1996. Reported consumption decreased by 4% in November.

According to *Platt's Metals Week* published quotations, the average North American producer price and London Metal Exchange (LME) cash price moved downward for the second consecutive month, decreasing by 7.7% and 6.1%, respectively. Market analysts expressed different opinions on the future of lead prices. One analyst pointed to the recent increase in world lead mine capacity as a deterrent to any significant increase in prices, while other analysts referred to an expected upswing in the demand for lead in batteries in both the U.S. and European markets as a reason to anticipate increasing lead prices (American Metal Market, 1997b).

National Defense Stockpile cash disposal (sale) of lead in November was 3,360 metric tons (3,704 short tons). Sale of lead to date in fiscal year 1998 (October through November 1997) was 7,229 metric tons (7,969 short tons). In addition to the regular monthly sale of lead, the Defense National Stockpile Center announced on November 19 the solicitation of offers for the sale of approximately 10,000 metric tons (11,000 short tons) of lead in negotiated long-term contracts. Offers for lead under this solicitation were to be accepted on December 1, 1997.

The U.S. Environmental Protection Agency (EPA) recently revised its lead air monitoring regulations in order to shift its monitoring focus away from emissions emanating from mobile sources and toward those existing at stationary point sources. The revisions were made in response to the fact that peak lead-in-air values being recorded at mobile-source monitors across the United States were significantly less than that required by National Ambient Air Quality Standards. According to historical data, lead air pollution levels measured near the Nation's roadways decreased 97% between 1976 and 1995 as a result of the elimination of lead in gasoline used by on-road vehicles. EPA's new direct final rule revising the lead monitoring regulations could eliminate about 70% of the current monitoring stations, thus making more resources available to State and local agencies to deploy lead air quality monitors around heretofore unmonitored stationary sources of lead. The effective date of EPA's revised regulations was scheduled to be December 22, 1997, unless adverse or critical comments were received by December 5, 1997 (U.S. Environmental Protection Agency, 1997).

The Doe Run Co., St. Louis, MO, reportedly will increase the smelting and refining capacity in the lead circuit at its recently purchased La Oroya (renamed MetalOroya) metallurgical complex near Lima, Peru. Current plans were to increase the installed capacity by 10% to a level of 110,000 tons per year by mid-1998. The increase in capacity was to be accomplished through installation of new instrument technology and automatic controls in the blast furnace phase of the smelter operation. In its continuing program to improve environmental conditions at the facilities, Doe Run also plans to build a sulfuric acid plant to reduce sulfur dioxide emissions (Platt's Metals Week, 1997b).

Anvil Range Mining Corp., Toronto, Canada, shipped the first lead-zinc concentrate from its Faro Mine, Yukon Territory, since the mine was closed in late December 1996. Anvil reportedly has arranged with Canada's Cominco Ltd. and Switzerland's Glencore Group for sufficient short-term working capital to keep the mine open through March 15, 1998. The arrangement gives Glencore the right to become the exclusive buyer of Faro concentrate through the end of March 1998. According to an Anvil spokesperson, if the mine continues in production beyond March 1998, Glencore will have the option to continue this arrangement for the remainder of the year

Prepared by the Metals Section and the Data Collection and Coordination Section, February 3, 1998.

(American Metal Market, 1997a; Platt's Metals Week, 1997a).

## References Cited


American Metal Market, 1997a, Faro makes first shipments: American Metal Market, v. 105, no. 228, November 24, p. 16.

———1997b, Lead's drop divides marketplace: American Metal Market, v. 105, no. 219, November 11, p. 16.

Platt's Metals Week, 1997a, Anvil Range arranges financing for Faro Mine restart: Platt's Metals Week , v. 68, no. 47, November 24, p. 1.

———1997b, Doe Run to lift Oroya lead refinery output by 10%: Platt's Metals Week, v. 68, no. 47, November 24, p. 7.

U.S. Environmental Protection Agency, 1997, Ambient air quality surveillance for lead: Federal Register, v. 62, no. 214, November 5, p. 59813-59818.

TABLE 1
SALIENT LEAD STATISTICS IN THE UNITED STATES 1/

(Metric tons)

| | 1996 | | 1997 | | |
|---|---|---|---|---|---|
| | Year total | Jan. - Nov. | Oct. | Nov. | Jan. - Nov. |
| Production: | | | | | |
| Mine (recoverable) | 426,000 | 380,000 | 35,400 r/ | 31,700 | 382,000 |
| Primary refinery 2/ | 326,000 | 301,000 | 30,500 | 29,000 | 314,000 |
| Secondary refinery: | | | | | |
| Reported by smelters/refineries | 1,080,000 | 915,000 | 93,300 | 92,400 | 970,000 |
| Estimated | -- | 14,500 | 1,640 | 1,610 | 16,200 |
| Recovered from copper-base scrap e/ | 16,400 | 13,800 | 1,250 | 1,250 | 13,800 |
| Total secondary | 1,100,000 | 943,000 | 96,200 | 95,200 | 1,000,000 |
| Stocks, end of period: | | | | | |
| Primary refineries 2/ | XX | XX | 7,310 | 8,710 | XX |
| Secondary smelters and consumers | XX | XX | 76,300 | 71,900 | XX |
| Imports for consumption: | | | | | |
| Ore and concentrates (lead content) | 6,570 | 5,860 | 9,450 | NA | 17,800 3/ |
| Refined metal | 268,000 | 245,000 | 26,000 | NA | 222,000 3/ |
| Consumption: | | | | | |
| Reported | 1,530,000 | 1,120,000 | 106,000 | 102,000 | 1,140,000 |
| Undistributed e/ | -- | 415,000 | 17,200 | 16,600 | 186,000 |
| Total | 1,530,000 | 1,540,000 | 123,000 | 119,000 | 1,330,000 |
| Exports (lead content): | | | | | |
| Ore and concentrates | 59,700 | 44,400 | 1,350 | NA | 40,600 3/ |
| Materials excluding scrap | 102,000 | 95,800 | 3,670 | NA | 73,400 3/ |
| Ash and residues | 19,400 | 18,800 | 1,390 | NA | 14,900 3/ |
| TEL/TML preparations, based on lead compounds | 3,200 | 2,950 | 146 | NA | 2,180 3/ |
| Exports (gross weight): Scrap | 85,300 4/ | 77,300 4/ | 9,910 | NA | 71,700 3/ |
| Platt's Metals Week North American producer price (cents per pound) | 48.83 | 48.85 | 46.19 | 45.83 | 46.66 |

e/ Estimated. r/ Revised. NA Not available. XX Not applicable.

1/ Data are rounded to three significant digits, except prices; may not add to totals shown.

2/ Data from American Bureau of Metal Statistics, Inc. (ABMS).

3/ Includes data for January - October only; November data not available at time of publication.

4/ Includes only non-battery scrap data.

TABLE 2
MONTHLY AVERAGE LEAD PRICES

| | North American producer price | LME | | Sterling exchange rate |
|---|---|---|---|---|
| | cents/lb | $/metric ton | £/metric ton | dollars/£ |
| 1996: | | | | |
| November | 48.72 | 716.18 | 430.83 | 1.662311 |
| Average Jan. - Nov. | 48.85 | 781.64 | 504.25 | 1.552315 |
| Year average | 48.83 | 773.87 | 495.56 | 1.561616 |
| 1997: | | | | |
| August | 45.84 | 607.74 | 379.00 | 1.603524 |
| September | 46.31 | 633.81 | 395.81 | 1.601276 |
| October | 46.19 | 599.80 | 367.30 | 1.633009 |
| November | 45.83 | 562.95 | 333.32 | 1.688906 |
| Average Jan. - Nov. | 46.66 | 632.61 | 386.90 | 1.636003 |

Source: Platt's Metals Week.

TABLE 3
MINE PRODUCTION OF RECOVERABLE LEAD IN THE UNITED STATES 1/

(Metric tons)

| | 1996 | | 1997 | | |
|---|---|---|---|---|---|
| | Year total | Jan. - Nov. r/ | Oct. | Nov. | Jan. - Nov. |
| Missouri 2/ | 397,000 | 358,000 | 34,000 r/ | 30,600 | 368,000 |
| Montana | 7,970 | 7,170 | 789 | 631 | W |
| Other States 3/ | 21,200 | 21,000 | 608 r/ | 466 | 13,900 |
| Total | 426,000 | 386,000 | 35,400 r/ | 31,700 | 382,000 |
| Daily average 4/ | 1,160 | 1,150 | 1,140 r/ | 1,060 | 1,140 |

r/ Revised. W Withheld to avoid disclosing company proprietary data; included with "Other States."
1/ Data are rounded to three significant digits; may not add to totals shown.
2/ Alaska and Missouri combined to avoid disclosing company proprietary data.
3/ Includes Colorado, Idaho, Illinois, New York and Tennessee.
4/ Based on number of days in period without adjustment for Sundays or holidays.

TABLE 4
CONSUMPTION OF PURCHASED LEAD-BASE SCRAP IN NOVEMBER 1997 1/

(Metric tons, gross weight)

| Item | Stocks Oct. 31, 1997 | Net receipts | Consumption | Stocks Nov. 30, 1997 |
|---|---|---|---|---|
| Battery-lead | 28,200 | 79,800 | 79,900 | 28,000 |
| Soft lead | W | W | W | W |
| Drosses and residues | 2,330 | 3,450 | 3,550 | 2,220 |
| Other 2/ | 2,610 | 3,140 | 3,280 | 2,460 |
| Total | 33,100 | 86,400 | 86,800 | 32,700 |
| Percent change from preceding month | -- | -14.0 | -14.4 | -1.2 |

W Withheld to avoid disclosing company proprietary data; included with "Other."
1/ Data are rounded to three significant digits; may not add to totals shown.
2/ Includes solder, common babbitt, antimonial lead, cable covering, type metals, and other lead-base scrap not elsewhere classified.

TABLE 5
LEAD, TIN, AND ANTIMONY RECOVERED FROM LEAD-BASE SCRAP IN NOVEMBER 1997 1/

(Metric tons)

| | Secondary metal content | | |
|---|---|---|---|
| Product recovered | Lead | Tin | Antimony |
| Soft and calcium lead | 51,200 | -- | -- |
| Remelt lead | W | W | W |
| Antimonial lead | 36,000 | 13 | W |
| Other 2/ | W | W | -- |
| Total lead-base | 92,400 | 38 | 387 |

W Withheld to avoid disclosing company proprietary data; included in "Total."
1/ Data are rounded to three significant digits.
2/ Includes cable lead, lead-base babbitt, solder, type metals, and other products.

TABLE 6
CONSUMPTION OF LEAD IN THE UNITED STATES 1/

(Metric tons, lead content)

| Uses | 1996 | | 1997 | | |
|---|---|---|---|---|---|
| | Jan.-Dec. 2/ | Jan.- Nov. | Oct. | Nov. | Jan.- Nov. |
| Metal products: | | | | | |
| Ammunition-shot and bullets | 52,100 | 34,900 | 4,530 | 3,300 | 48,600 |
| Brass and bronze-billet and ingots | 5,460 | 5,620 | 510 | 479 | 5,670 |
| Cable covering-power and communication and calking lead-building construction | W | 6,130 | 375 | 707 | 5,120 |
| Casting metals | 18,800 | 1,360 | 401 | 406 | 4,800 |
| Pipes, traps, and other extruded products | (3/) | (3/) | (3/) | (3/) | (3/) |
| Sheet lead | 21,200 | 8,700 | 1,170 | 1,060 | 14,800 |
| Solder | 9,020 | 5,200 | 435 | 317 | 5,930 |
| Storage batteries, including oxides | 1,340,000 | 1,040,000 | 97,700 | 95,100 | 1,050,000 |
| Terne metal, type metal, and other metal products 4/ | 9,560 | 3,700 | 257 | 226 | 2,260 |
| Total metal products | 1,460,000 | 1,110,000 | 105,000 | 101,000 | 1,140,000 |
| Other oxides | (5/) | (5/) | (5/) | (5/) | (5/) |
| Miscellaneous uses | 70,900 | 12,700 | 504 | 438 | 5,340 |
| Total reported | 1,530,000 | 1,120,000 | 106,000 | 102,000 | 1,140,000 |
| Undistributed consumption e/ | -- | 415,000 | 17,200 | 16,600 | 186,000 |
| Grand total | 1,530,000 | 1,540,000 | 123,000 | 119,000 | 1,330,000 |

e/ Estimated. W Withheld to avoid disclosing company proprietary data; included in "Total metal products."
1/ Data are rounded to three significant digits; may not add to totals shown.
2/ Includes annual data.
3/ Withheld to avoid disclosing company proprietary data; included with "Sheet lead."
4/ Includes lead consumed in bearing metals, foil, collapsible tubes, annealing, plating, galvanizing, and fishing weights.
5/ Withheld to avoid disclosing company proprietary data; included with "Miscellaneous uses."

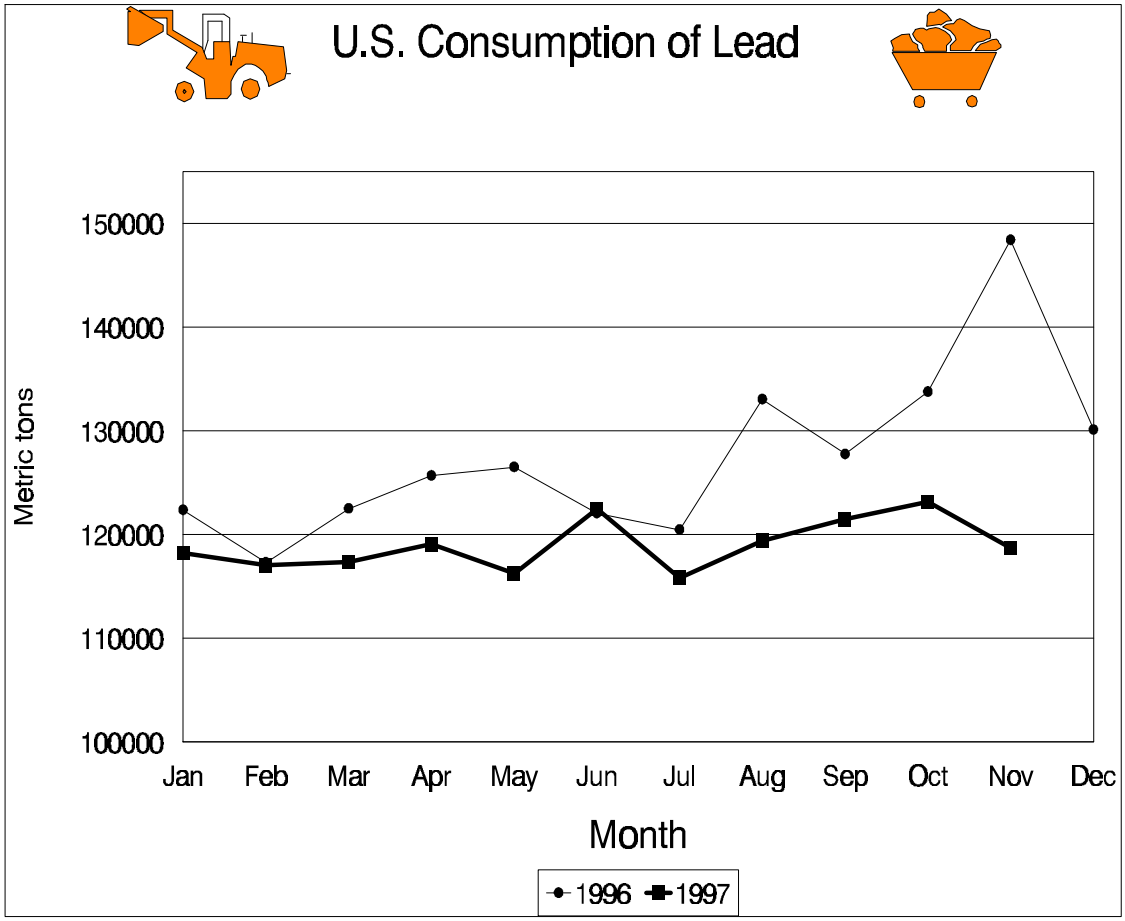

TABLE 7
CONSUMER AND SECONDARY SMELTER STOCKS, RECEIPTS, AND
CONSUMPTION OF LEAD IN NOVEMBER 1997 1/

(Metric tons, lead content)

| Type of material | Stocks Oct. 31, 1997 | Net receipts | Consumption | Stocks Nov. 30, 1997 |
|---|---|---|---|---|
| Soft lead | 40,700 | 47,900 | 54,300 | 34,200 |
| Antimonial lead | 29,400 | 31,900 | 30,500 | 30,800 |
| Lead alloys | W | 17,500 | 16,900 | W |
| Copper-base scrap | W | 412 | 412 | W |
| Total | 76,300 | 97,700 | 102,000 | 71,900 |

W Withheld to avoid disclosing company proprietary data; included in "Total."
1/ Data are rounded to three significant digits; may not add to totals shown.

TABLE 8
U.S. EXPORTS OF LEAD, BY CLASS 1/

(Metric tons)

| | 1996 | | 1997 | | |
|---|---|---|---|---|---|
| | Year total | Oct. | Sept. | Oct. | Jan. - Oct. |
| Lead content: | | | | | |
| Ore and concentrates | 59,700 | 236 | 5,770 | 1,350 | 40,600 |
| Materials excluding scrap | 102,000 | 7,140 | 7,650 | 3,670 | 73,400 |
| Ash and residues | 19,400 | 3,320 | 799 | 1,390 | 14,900 |
| TEL/TML preparations, based on lead compounds | 3,200 | 59 | 297 | 146 | 2,180 |
| Total | 184,000 | 10,800 | 14,500 | 6,560 | 131,000 |
| Gross weight: Scrap | 85,300 2/ | 6,270 2/ | 6,920 | 9,910 | 71,700 |

1/ Data are rounded to three significant digits; may not add to totals shown.
2/ Includes only non-battery scrap data.

Source: Bureau of the Census.

TABLE 9
U.S. IMPORTS OF LEAD BY TYPE OF MATERIALS AND BY COUNTRY OF ORIGIN 1/

(Metric tons, lead content)

| | General imports | | | | | Imports for consumption | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 1996 | | 1997 | | | 1996 | | 1997 | | |
| Country of origin | Year total | Jan. - Oct. | Sept. | Oct. | Jan. - Oct. | Year total | Jan. - Oct. | Sept. | Oct. | Jan. - Oct. |
| Ore, matte, etc.: | | | | | | | | | | |
| Bolivia | 326 | 317 | 230 | 273 | 1,120 | -- | -- | -- | -- | -- |
| Canada | 352,000 | 304,000 | 32 | 18 | 59,700 | 4,370 | 4,220 | -- | (2/) | 753 |
| Mexico | 2,890 | 2,330 | -- | -- | 558 | 2,080 | 1,520 | -- | -- | 558 |
| Peru | 13,400 | 12,600 | 75 | 2,320 | 9,220 | -- | -- | -- | 954 | 3,370 |
| Other | 133 | 133 | -- | 8,490 | 13,600 | 122 | 122 | -- | 8,490 | 13,100 |
| Total | 369,000 | 319,000 | 338 | 11,100 | 84,200 | 6,570 | 5,860 | -- | 9,450 | 17,800 |
| Base bullion: | | | | | | | | | | |
| Canada | -- | -- | -- | 20 | 20 | -- | -- | -- | 20 | 20 |
| Mexico | 5 | 5 | -- | -- | 5 | 5 | 5 | -- | -- | 5 |
| Total | 5 | 5 | -- | -- | 25 | 5 | 5 | -- | -- | 25 |
| Pigs and bars: | | | | | | | | | | |
| Belgium | 11 | 11 | -- | -- | 47 | 11 | 11 | -- | -- | 47 |
| Canada | 192,000 | 156,000 | 17,400 | 17,300 | 158,000 | 192,000 | 156,000 | 17,700 | 17,300 | 158,000 |
| Germany | 338 | 226 | -- | 43 | 401 | 338 | 226 | -- | 43 | 401 |
| Mexico | 56,900 | 47,700 | 9,270 | 8,060 | 57,400 | 56,900 | 47,700 | 9,270 | 8,060 | 57,400 |
| Peru | 17,100 | 15,600 | 500 | 500 | 5,200 | 17,100 | 15,600 | 500 | 500 | 5,200 |
| United Arab Emirates | 160 | 130 | 10 | 10 | 62 | 160 | 130 | 10 | 10 | 62 |
| United Kingdom | 19 | 19 | -- | -- | -- | 19 | 19 | -- | -- | -- |
| Other | 846 | 715 | 18 | 80 | 1,050 | 846 | 715 | 18 | 80 | 1,050 |
| Total | 267,000 | 220,000 | 27,200 | 26,000 | 222,000 | 268,000 | 220,000 | 27,500 | 26,000 | 222,000 |
| Reclaimed scrap, including ash and residues | 192 | 192 | -- | -- | 62 | 192 | 192 | -- | -- | 62 |
| Grand total | 636,000 | 539,000 | 27,500 | 37,100 | 306,000 | 274,000 | 226,000 | 27,500 | 35,500 | 240,000 |

1/ Data are rounded to three significant digits; may not add to totals shown.
2/ Less than 1/2 unit.

Source: Bureau of the Census.